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RAD-900-DAIO6 - Wireless module

2702877

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Radioline - 900 MHz wireless transceiver with six integrated I/O channels, NEMA 4X enclosure, N (female) antenna connection, omnidirectional antenna, point-to-point, star, and mesh networks up to 250 stations, range of up to 32 km (line of sight), for use in North America

Your advantages

- Range of several kilometers thanks to adjustable data rates for the wireless interface
- NEMA 4X housing reduces time and complexity of installation
- Power using AC mains or DC control voltages
- Completely compatible with existing Radioline installations

Commercial data

Item number	2702877
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DNC611
Catalog page	Page 377 (C-6-2019)
GTIN	4055626428888
Weight per piece (including packing)	2,075.3 g
Weight per piece (excluding packing)	2,075.3 g
Customs tariff number	85176200
Country of origin	US

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Technical data

Notes

Note on application

Note on application	Only for industrial use

Trade restriction

CE note	The products are offered exclusively for export outside the EU and the European Economic Area.

Product properties

Product type	Wireless module

Insulation characteristics

Overvoltage category	II
Degree of pollution	2

Electrical properties

Electrical isolation	300 V (Rated insulation voltage (in each case between the analog inputs/analog outputs/AC supply, reinforced insulation according to EN 61010))
	50 V (Rated insulation voltage (in each case between the analog inputs/analog outputs/DC supply, reinforced insulation according to EN 61010))
	300 V (Rated insulation voltage (in each case between the digital inputs and digital outputs, reinforced insulation according to EN 61010))
	300 V (Rated insulation voltage (in each case between the digital inputs and outputs // analog inputs and outputs, reinforced insulation in accordance with EN/IEC 61010))
Test voltage for digital I/Os	2.5 kV AC (60 Hz, 2 s)
Test voltage for analog I/Os	1.5 kV AC (60 Hz, 2 s)
Transient surge protection	yes

Supply

Supply voltage	24 V DC
Supply voltage range	10.8 V DC ... 30.5 V DC
	100 V AC ... 240 V AC
Typical current consumption	110 mA (120 V AC)
Max. current consumption	368 mA (10.8 V DC)
	135 mA (30.5 V DC)
	116 mA (100 V AC)
	60 mA (240 V AC)
Power consumption	7.4 W (peak; 30 dBm)

Input data

Digital

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Max. current consumption	< 1 mA

Analog

Description of the input	Analog input
Number of inputs	1
Current input signal	0 mA ... 20 mA (can be set via DIP switches)
	4 mA ... 20 mA (can be set via DIP switches)
Max. current input signal	22 mA
Input resistance current input	< 70 Ω
Resolution	16 bit
Precision	≤ 0.02 % (at 25 °C)
Protective circuit	Short-circuit and overload protection
Temperature coefficient, typical	typ. 0.0025 %/K (at -40 °C ... +70 °C)
Supply voltage	≥ 12 V DC (For passive sensors (via terminal PWR1, +I1))

Digital

Description of the input	Digital input
Number of inputs	2
Min. voltage input signal	0 V AC/DC
Max. voltage input signal	250 V AC/DC
Switching level "0" signal	0 V AC/DC ... 4 V AC/DC (Low-voltage input)
	0 V AC/DC ... 20 V AC/DC (High-voltage input)
Switching level "1" signal	10 V AC/DC ... 50 V AC/DC (Low-voltage input)
	50 V AC/DC ... 250 V AC/DC (High-voltage input)
Input frequency	≤ 2 Hz

Output data

Digital

Output name	Relay output
Number of outputs	2
Contact switching type	Changeover contact
Contact material	$AgSnO_2$
Maximum switching voltage	250 V AC
	24 V DC
Min. switching current	≥ 10 mA
Max. switching current	2 A
Mechanical service life	1x 10^7 cycles
Electrical service life	2x 10^5 cycles (At 2 A, 250 V AC, cosφ 0.4)
	2x 10^5 cycles (At 1 A, 24 V DC, L/R = 48 ms)
Maximum switching frequency	2 Hz
Switching capacity	48 W (24 V DC)
	60 W (30 V DC)
	20 W (48 V DC)
	18 W (60 V DC)

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	22 W (110 V DC)
	40 W (220 V DC)
	42 W (250 V DC)
Behavior of the outputs (adjustable via DIP switch)	Hold / Reset

Analog

Output name	Analog output
Number of outputs	1
Voltage output signal	0 V ... 10 V
Max. voltage output signal	approx. 10.83 V
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
Max. current output signal	approx. 21.67 mA
Load	≥ 10 kΩ
	≤ 500 Ω
Resolution	16 bit
Protective circuit	Transient protection of outputs

Digital

Output name	RF link relay output
Number of outputs	1
Contact switching type	Changeover contact
Contact material	PdRu, gold-plated
Maximum switching voltage	30 V AC/DC
Max. switching current	500 mA
Electrical service life	5x 10^5 switching cycles with 0.5 A at 30 V DC

Analog

Output name	RSSI voltage output
Number of outputs	1
Voltage output signal	0 V ... 3 V

Connection data

Connection method	Screw connection
Stripping length	11 mm
Conductor cross section, rigid min.	0.14 mm²
Conductor cross section, rigid max.	2.5 mm²
Conductor cross section flexible min.	0.14 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section AWG min.	26
Conductor cross section AWG max.	14

Interfaces

Wireless

Range	± 32 km (The range may be considerably above or below that

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	stated, and depends on the environment, antenna technology, and the product used)

Wireless

Interface description	Trusted Wireless
Direction	Bi-directional
Frequency	900 MHz
Frequency range	902 MHz ... 928 MHz
Transmission power	max. 1 W (adjustable)
Data rate	16 kbps (adjustable)
	125 kbps (adjustable)
	250 kbps (adjustable)
	500 kbps (adjustable)
Minimum receiver sensitivity	-112 dBm (16 kbps)
	-105 dBm (125 kbps)
	-102 dBm (250 kbps)
	-95 dBm (500 kbps)
Antenna connection method	N (female)
Security	128-bit data encryption

Functions

Country support	USA (FCC, Part 15.247, ID: SGV-SHR-900)
	Canada (IC, RSS210, ID: 4720C-SHR900)

Wireless

Frequency range	902 MHz ... 928 MHz
Frequency band	900 MHz
Wireless standard	Trusted Wireless

Signaling

Status display	LED supply voltage, PWR (green)
	Green LED (bus communication, DAT)
	LED periphery error, ERR (red)
	3x green, 1x yellow LED (LED bar graph receive quality, RSSI)
	Yellow LED (digital input, DI1)
	Yellow LED (digtial input, DI2)
	Yellow LED (digtial output, DO1)
	Yellow LED (digtial output, DO2)

Dimensions

Width	220 mm
Height	90 mm
Depth	120 mm

Material specifications

Color	black

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Flammability rating according to UL 94	V0
Housing material	Glass-reinforced plastic (GRP)

Environmental and real-life conditions

Ambient conditions

Degree of protection	NEMA 4
Ambient temperature (operation)	-40 °C ... 70 °C (DC)
	-40 °C ... 65 °C (AC)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
	-40 °F ... 185 °F
Altitude	2000 m
Permissible humidity (operation)	20 % ... 85 %
Permissible humidity (storage/transport)	20 % ... 85 %
Shock	in accordance with DIN EN 60068-2-27: 30g, 18 ms
Vibration (operation)	in accordance with IEC 60068-2-6: 5g, 10 Hz ... 150 Hz

Approvals

Conformity/Approvals

Conformance	FCC Directive, Part 15.247
	ISC Directive RSS 210
UL, USA / Canada	ANSI/ISA/CSA 22.2 61010-2-201, UL 50E Type 4
	Class I, Div. 2, Groups A, B, C, D T4 Class I, Zone 2, IIC T4

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC

Mounting

Mounting type	Panel mount

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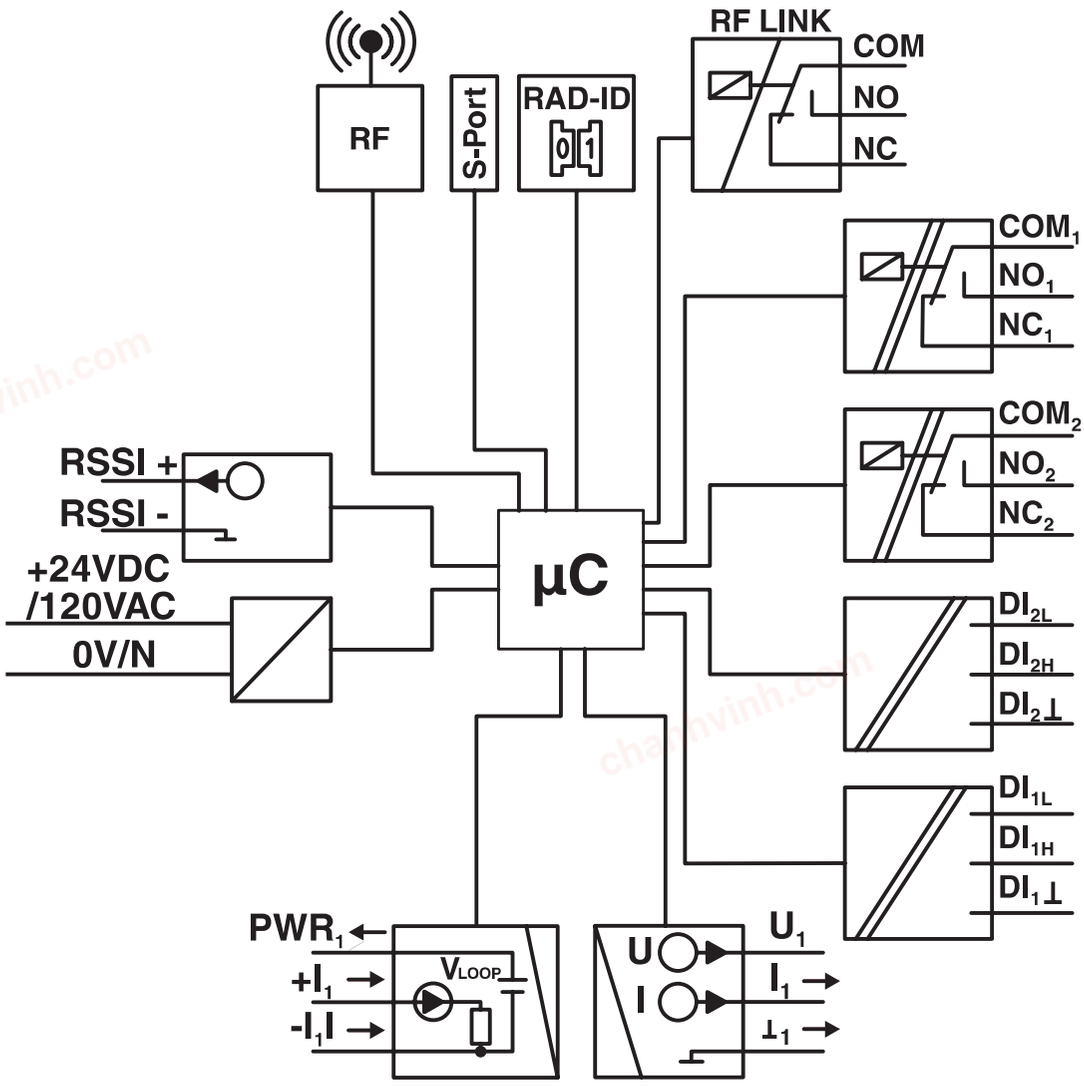
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Drawings

Block diagram



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Approvals

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UL Listed
Approval ID: E238705

cUL Listed
Approval ID: E238705

cUL Listed
Approval ID: E196811

UL Listed
Approval ID: E196811

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Classifications

ECLASS

ECLASS-11.0	19179090
ECLASS-12.0	19179090
ECLASS-13.0	19179090

ETIM

ETIM 9.0	EC000310

UNSPSC

UNSPSC 21.0	43222600

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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)

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PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstraße 8
D-32825 Blomberg
+49 (0) 5235-3 00
info@phoenixcontact.com